

REMARKS

I. Status of Claims

Claims 1-14 are pending in the application.

Claim 1 is amended to correct a minor typographical error.

No new matter is added.

II. Response to Claim Objection

Claim 1 is objected to because of a minor typographical error.

Applicants respectfully submit that in view of the amendment to claim 1, the objection has been overcome.

Therefore, Applicants request reconsideration and withdrawal of the objection to claim 1.

III. Response to Rejections under 35 U.S.C. § 103

A. Claims 1-4 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Takayuki et al. (JP2001-062934) in view of Neumann (U.S. Patent No. 4,201,308).

Present claim 1 recites a puncture sealing agent comprising at least a rubber latex solution, a short fiber, and a clay based viscosity improver. The viscosity of the rubber latex solution after addition of the clay based viscosity improver is from 3 to 6000 mPa·s in the range of +50 to -20°C.

Applicants submit that this invention would not have been obvious because one skilled in the art would not have been motivated to combine the references in view of their different technological fields.

Specifically, a puncture sealing agent for a tire is used in a puncture repair mechanism. The puncture repair mechanism generally operates by first applying the puncture sealing agent to a puncture hole. As the puncture hole repeatedly opens and closes with the rotation of the tire,

the wall surface of the puncture hole is subjected to a large shearing force when the puncture hole closes. When the puncture sealing agent, which is in liquid state, is injected from a container into the tire through a bulb provided with the container so as to cover the puncture hole, the shearing force makes the rubber latex component contained in the puncture sealing agent coagulate (cure) so that the coagulated rubber latex clogs the puncture hole to complete the puncture repair mechanism.

The rubber latex component contained in the puncture sealing agent is required to coagulate upon being subjected to shearing force as described above. Accordingly, components of the puncture sealing agent other than the rubber latex component are selected based on the criteria that they do not affect or prevent the coagulation reaction of the rubber latex component upon application of a large shearing force, and that they do not excessively thicken the puncture sealing agent so as to maintain the liquid (latex) state of the puncture sealing agent before injection into the tire, so that the puncture sealing agent can be injected through the bulb as described above.

Neumann teaches a sealant composition which is applied and cured to connect a cylindrical or tubular body of a container and top end members. See Fig. 3 of Neumann. Neumann describes that the sealant (liquid) composition works by being dispensed to peripheral portions of the body and then being set or cured by drying, and the body with the sealant composition may be subjected to "handling, stacking, or temporary storage" during the setting or the curing. See column 1, lines 36 to 64 of Neumann. However, Neumann fails to teach or suggest a specific curing condition which is accompanied by a large shearing force such as that which occurs in the puncture repair mechanism.

Since there is no suggestion in Neumann that the sealant composition disclosed therein might be used in the puncture repair mechanism without affecting or preventing the coagulation reaction of the rubber latex component, one skilled in the art would not be motivated to specifically combine the teaching of Neumann with the puncture sealing material as taught by Takayuki, to arrive at the presently claimed invention with a reasonable expectation of success.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the §103 rejection of claims 1-4 based on Neumann and Takayuki.

B. Claims 5, 7-10 and 13-14 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Takayuki and Neumann as applied to claims 1-4 in view of Dugan (U.S. Patent Application No. 2002/0110686).

Claims 5, 7-10 and 13-14 are patentable, at least by virtue of their dependence from claim 1, and dependent claims thereof. Furthermore Dugan does not cure the deficiency of Takayuki in view of Neumann, as discussed above.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the §103 rejection based on Takayuki and Neumann in view of Dugan.

C. Claims 6 and 11-12 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Takayuki and Neumann in view of McInnes (U.S. Patent Application No. 2002/0077391).

Claims 6 and 11-12 are patentable, at least by virtue of their dependence from claim 1, and dependent claims thereof. Furthermore McInnes does not cure the deficiency of Takayuki in view of Neumann, as discussed above.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the §103 rejection based on Takayuki and Neumann in view of McInnes.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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